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EXAMINER

WALTERS JR, ROBERT S

ART UNIT	PAPER NUMBER
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1792

NOTIFICATION DATE	DELIVERY MODE
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10/01/2008

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ADIPFDD@bipc.com

Office Action Summary	Application No. 10/566,676	Applicant(s) BESNER ET AL.	
	Examiner ROBERT S. WALTERS JR	Art Unit 1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 February 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 25-45 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 25-45 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>12/20/2006, 1/3/2007</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Status of Application

Claims 1-24 are cancelled, and claims 25-45 are pending and presented for examination.

Specification

The abstract of the disclosure is objected to because of the use of legal terminology such as "said". Correction is required. See MPEP § 608.01(b).

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

Claim Objections

Claims 29, 31, 34 and 36 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 34 fails to limit independent claim 25 as claim 25 already states that the wood preservative is a water-borne wood preservative. Claim 36 fails to limit claim 25, in that claim 25 already claims that the reactive groups have a reactive

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double bond. Further, with regards to claims 29, 31, and 36, the limitation "or are issued from a compound having a reactive double bond" broadens the claims from which these claims depend.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claim 32 recites the limitation "the cooling step". There is insufficient antecedent basis for this limitation in the claim. For examination purposes, this claim has been interpreted as the process of claim 26, further comprising a cooling step carried out for a period of at least 1 to 12 hours after step b2) but before step b3) (see spec at page 3, lines 6-10 for support for this interpretation).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

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4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

2. Claims 25-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Besner et al. (U.S. Pat. No. 6063883) in view of Kelso (U.S. Pat. No. 4303705).

I. Regarding claims 25, 27, 33-36, 40-42 and 44-45, Besner teaches a process for treating wooden elements (column 3, lines 49-50) and treated wooden elements obtained by the process (see any of the Examples) comprising the following steps:

- (1) impregnating the wooden elements with a mixture comprising at least one water-borne wood preservative, specifically chromated copper arsenate (see Example 1, column 7) and polymerizable reactive groups (column 3, lines 53-62) having a reactive double bond that will form a polymer under polymerizing conditions (column 4, lines 8-21),
- (2) heating the wooden elements at a temperature between 25 and 100 °C to fix the preservative and polymerize the reactive groups (column 4, lines 44-47), and
- (3) drying the wooden elements (see Example 1, column 7, lines 66-67).

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Besner further teaches that the wooden elements treated by this method have an amount of the polymerizable reactive groups impregnated in the 0-2 cm depth being $16.2 \pm 3.4 \text{ kg/m}^3$ (Example 1).

Besner fails to explicitly teach the step of conditioning the wooden elements to reduce their moisture content to the claimed ranges or heating at a temperature of at least 51 °C. With regards to the temperature, it would have been obvious to one of ordinary skill in the art at the time of the invention that the temperature is a result effective variable given that varying it will obviously vary the degree of polymerization or the fixing of the wood preservative as well as the length of time required to accomplish these operations. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to choose the instantly claimed range through process optimization, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. See In re Boesch, 205 USPQ 215 (CCPA 1980).

As disclosed, Besner also fails to teach the conditioning step. It is well known in the art to condition the wood, prior to treatment, for example by drying to remove some of the moisture content. For example, Kelso teaches a wood treatment of applying chromated copper arsenate to wood and heating to fix the chemicals (see abstract). The wooden elements to be treated are subjected to a first step of conditioning the wood to reduce the moisture content by air drying to 25% (see Example 7, column 8) followed by the treatment with the wood preservative. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Besner's method to include a conditioning step of removing the moisture content as taught by Kelso. One would have been motivated to make this modification as the removal of some of the

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moisture content prior to treatment would allow for better impregnation of the water-borne wood preservative solution into the wood thereby providing better retention of the chemical upon fixing. Furthermore, one of ordinary skill in the art at the time of the invention could have modified Besner's method to include Kelso's conditioning step with a reasonable expectation of success and the predictable result of providing a product that is better prepared for the subsequent solution treatments.

II. Regarding claim 26, Besner in view of Kelso teach all the limitations of claim 25 (see above) including the step of conditioning the wooden elements to reduce the moisture content (see above) followed by impregnating the wooden elements with a water-borne wood preservative (see above). Besner also teaches that the impregnation with the wood preservative can occur prior to treatment with a solution containing the polymerizable reactive groups (column 4, lines 2-5). Besner further teaches heating the wooden elements at greater than 51 °C (see above) to effect fixation of the wood preservative, as well as the step of treating the wood with a polymerizing solution that can be added after impregnation with the wood preservative (see above). Finally, Besner also teaches the step of subjecting the wooden elements that have been treated with the polymerizing solution to conditions to effect polymerization (column 4, lines 17-21).

Besner in view of Kelso fail to explicitly teach that the wood elements impregnated with the wood preservative prior to treatment with the polymerizing solution are heated at greater than 51 °C to fix the wood preservative and that this material is then treated with the polymerizing solution also containing an additional wood preservative. Besner teaches that it is well known

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to apply a wood preservative solution and heating at greater than 51 °C to fix the preservatives (column 1, lines 57-65). Besner also teaches that the polymerizing treatment solution can be added as a mixture of the polymerizing agents and the wood preservative.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Besner's method to impregnate the wood with wood preservative and then fix that preservative (by the conventional method), followed by treating the wood with the polymerizing solution and an additional amount of wood preservative. One would have been motivated to modify Besner in view of Kelso's steps, because in separating the steps the wood preservative could be added at two intervals, ensuring that it was properly added in the usual treatment step (without the polymerizing solution) as well as allowing for the introduction of a greater concentration of the wood preservative in the wood during addition of the polymerizing solution. This would impart the wood with improved characteristics over wood that had been only treated once with preservative. Further, one of ordinary skill in the art at the time of the invention could have separated the fixation and polymerization steps while adding additional wood preservative in the polymerizing solution with a reasonable expectation of success and the predictable result of providing a wooden element having the additional benefit of a greater concentration of the wood preservative contained in the wooden elements.

III. Regarding claims 28-29, Besner in view of Kelso teach all the limitations of claim 26 (see above). Further, Besner teaches that the treatment solution contains 2% w/v of wood preservative and 4 to 10% w/v of the polymerizable reactant groups (column 6, lines 15-24). It should be noted that these values are not percentages by weight and therefore do not have a 1:1

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relationship with the values claimed, however, it is expected that these values would fall within the ranges as claimed. Alternatively, it would have been obvious to one of ordinary skill in the art at the time of the invention that the concentrations of the wood preservative and polymerizable reactive groups are result effective variables as optimization of these concentrations would allow for optimization of the concentrations of these components in the wood elements as well as the characteristics of the wood, such as hardness. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to choose the instantly claimed ranges through process optimization, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. See *In re Boesch*, 205 USPQ 215 (CCPA 1980).

IV. Regarding claim 30, Besner in view of Kelso teach all the limitations of claim 29 (see above), however fail to teach the concentration of the wood preservative being 0.04 to 0.12% in the polymerizing solution of step b3). However, as taught above, the concentration of the wood preservative in the solution is a result effective variable, in this case the second concentration of the wood preservative added in the polymerizing solution would effect the final concentration of the wood preservative in the wooden elements and therefore effect their hardness and other characteristics. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to choose the instantly claimed range through process optimization, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. See *In re Boesch*, 205 USPQ 215 (CCPA 1980).

V. Regarding claim 31, Besner in view of Kelso teach all the limitations of claim 27 (see above) and Besner further teaches that the solution contains 2% w/v of the wood preservative and 4 to 10% w/v of the polymerizable reactive groups, though Besner fails to explicitly teach the claimed ranges. However, as disclosed above, the concentration of the wood preservative and the polymerizable reactive groups are result effective variables (see above). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to choose the instantly claimed ranges through process optimization, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. See *In re Boesch*, 205 USPQ 215 (CCPA 1980).

VI. Regarding claim 32, Besner in view of Kelso teach all the limitations of claim 26, however fail to explicitly teach a cooling step being carried out for a period of at least 1 to 12 hours. However, it would be obvious to one of ordinary skill in the art at the time of the invention to modify Besner in view of Kelso to include a cooling step for a period of 1 to 12 hours after the impregnation and fixing of the wood with the wood preservative. One would have been motivated to make this modification as allowing the wooden elements to cool would ensure that the polymerizing solution to be applied next would not polymerize on contact and could actually be impregnated into the wood prior to heating and polymerization. This would then ensure that the polymer would be better contained in the wood, rather than just contained on the surface of the wood and potentially able to be readily washed away.

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VII. Regarding claims 37-39, Besner in view of Kelso teach all the limitations of claim 29 (see above). Besner further teaches that the reactive groups are selected from groups comprising allyl, vinyl, acrylate, or methacrylate (column 4, lines 8-11), specifically polyethylene glycol diacrylates having a molecular weight of 200 to 1000 daltons (column 6, lines 48-52).

VIII. Regarding claim 43, Besner in view of Kelso teach all the limitations of claim 25, however fail to teach that the amount of wood preservative impregnated in the wooden elements is equal or greater than 9.6 kg/m^3 . However, the amount of wood preservative impregnated in the wooden elements is a result effective variable, in that optimization of the amount impregnated will allow for optimization of the hardness of the wooden elements as well as other characteristics of the wooden elements. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to choose the instantly claimed range through process optimization, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. See *In re Boesch*, 205 USPQ 215 (CCPA 1980).

Conclusion

Claims 25-45 are pending.

Claims 25-45 are rejected.

No claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT S. WALTERS JR whose telephone number is

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(571)270-5351. The examiner can normally be reached on Monday-Thursday, 6:30am to 5:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr can be reached on (571)272-1414. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ROBERT S. WALTERS JR/
September 24, 2008
Examiner, Art Unit 1792

/Michael Barr/
Supervisory Patent Examiner, Art Unit
1792
